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Amendment dated August 18, 2009
Reply to Office Action of May 27, 2009

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AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An image processing method of selectively eliminating an individual line segment from a moving image object in one image comprising effective or ineffective pixels,

~~implemented by an image processing apparatus, the line segment having only two end points from~~

the individual line segment being part of a line-shaped image object ~~overlapping a moving image object in one image comprising effective or ineffective pixels, from~~ which overlaps the moving image object,

the method being implemented by an image processing apparatus and comprising the respective steps of:

a line segment extraction step for selectively extracting the individual line segment ~~having only two end points~~ from the line-shaped image object by a line segment extraction means of the image processing apparatus;

an elimination step for enlarging the individual line segment to a line width of three pixels and for eliminating the ~~line-shaped image object~~ individual line segment from the moving image object by a line-shaped image elimination means of the image processing apparatus;

a pixel extraction step for scanning a vicinity region of the individual line segment having only two end points on the moving image object and sequentially extracting pixels to be scanned by an image scan means of the image processing apparatus;

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an effective pixel determination step for determining whether or not the extracted

pixels to be scanned are the effective pixels by an effective pixel determination means of the

image processing apparatus; and

a pixel interpolation step for dropping a perpendicular from the pixels to be scanned

that are determined to be the effective pixels at the effective pixel determination step to a

nearest individual line segment and setting each individual pixel on the perpendicular as the

effective pixels by a pixel interpolation means of the image processing apparatus.

2. (Currently Amended) An image processing method according to claim 1, wherein

the image is one frame ~~in a~~ in the moving image object comprising a plurality of frames.

3. (Currently Amended) An image processing method according to claim 1, wherein

the image is an image obtained by subjecting a single frame or plural frames ~~in a~~ in the

moving image object comprising the plurality of frames to predetermined arithmetic

processing.

4. (Currently Amended) An image processing method according to claim 3, wherein

the arithmetic processing is any one of processing for determining a difference between two

arbitrary frames in the moving image object or processing for determining a change region in

one arbitrary frame in the moving image object.

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5. (Currently Amended) An image processing method according to claim 4, wherein the processing for determining the change region in the one arbitrary frame in the moving image <u>object</u> is processing for extracting predetermined frames before and after the one frame and obtaining difference images between each predetermined frame and the one frame, respectively as well as executing an ANDing operation of both of the difference images.

6. (Currently Amended) An image processing method according to claim 1, wherein the individual line segment ~~having only two end points~~ is selectively extracted using a Hough transform at the line segment extraction step.

7. (Currently Amended) An image processing apparatus for selectively eliminating an individual line segment ~~having only two end points~~ from a <u>moving image object in one image comprising effective or ineffective pixels,</u>

~~line-shaped image object overlapping a moving image object in a single image comprising effective or ineffective pixels, from~~

<u>the individual line segment being part of a line-shaped image object which overlaps</u> the moving image object, the apparatus comprising:

a line segment extraction means for selectively extracting the individual line segment ~~having only two end points~~ from the line-shaped image object;

a line-shaped image elimination means for <u>enlarging the individual line segment to a line width of three pixels and for</u> eliminating the ~~line-shaped image object~~ <u>individual line</u>

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segment from the moving image object;

an image scan means for scanning a vicinity region of the individual line segment having only two end points on the moving image object and sequentially extracting pixels to be scanned;

an effective pixel determination means for determining whether or not the extracted pixels to be scanned are the effective pixels; and

a pixel interpolation means for dropping a perpendicular from the pixels to be scanned that are determined to be the effective pixels at the effective pixel determination step to a nearest line segment and setting each individual pixel on the perpendicular as the effective pixels.

8. (Currently Amended) An image processing apparatus according to claim 7 comprises a frame extraction means for extracting one frame from a from the moving image object comprising a plurality of frame frames and uses one frame extracted by the frame extraction means as an image.

9. (Currently Amended) An image processing apparatus according to claim 7 comprises a frame extraction means for extracting a single frame or a plurality of frames from a from the moving image object comprising a plurality of frames and a frame arithmetic processing means for subjecting an extracted frame to predetermined arithmetic processing and uses a result of the arithmetic processing as the image.

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10. (Currently Amended) An image processing apparatus according to claim 9, wherein the frame arithmetic processing means executes any processing of processing for determining a difference between two arbitrary frames in the moving image object and processing for determining a change region in one arbitrary frame in the moving image object.

11. (Currently Amended) An image processing apparatus according to claim 10, wherein, the processing executed by the frame arithmetic processing means to determine the change region in the one arbitrary frame in the moving image object is processing for extracting predetermined frames before and after the one frame and obtaining difference images between each predetermined frame and the one frame, respectively as well as executing an ANDing operation of both of the difference images.

12. (Currently Amended) An image processing apparatus according to claim 7, wherein the line segment extraction means selectively extracts the individual line segment having only two end points using a Hough transform.

13-14. (Cancelled)

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15. (Currently Amended) An image processing apparatus for eliminating a line segment having only two end points from <u>a moving image object in one image comprising effective or ineffective pixels,</u>

~~a line-shaped image object overlapping a moving image object in a single image comprising effective or ineffective pixels, from~~

<u>the line segment being part of a line-shaped image object which overlaps</u> the moving image object, the apparatus comprising:

a line segment extraction means for extracting the line segment having only two end points from the line-shaped image object;

a line-shaped image elimination means for eliminating the line segment having only two end points ~~from line-shaped image object~~ from the moving image object;

an image scan means for scanning a vicinity region of the line segment having only two end points on the moving image object and sequentially extracting pixels to be scanned;

an effective pixel determination means for determining whether or not the extracted pixels to be scanned are the effective pixels;

a pixel interpolation means for dropping a perpendicular from the pixels to be scanned that are determined to be the effective pixels at the effective pixel determination step to a nearest line segment and setting all the pixels on the perpendicular as the effective pixels;

a frame extraction means for extracting a single frame or a plurality of frames from a moving image comprising a plurality of frames; and

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a frame arithmetic processing means for subjecting an extracted frame to predetermined arithmetic processing and uses a result of the arithmetic processing as the image,

wherein the frame arithmetic processing means executes any processing for determining a difference between two arbitrary frames in the moving image and processing for determining a change region in one arbitrary frame in the moving image,

wherein the processing executed by the frame arithmetic processing means to determine the change region in the one arbitrary frame is processing for extracting predetermined frames before and after the one frame and obtaining difference images between each predetermined frame and the one frame, respectively as well as executing an ANDing operation of both of the difference images.